

"Village with a Past, City with a Future"

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ADDENDUM NO. 2

This addendum consists of <u>25</u> pages with attachments.

TO: All Bid Packet Holders

FROM: City of Kenai Public Works Department

DATE: August 22, 2019

SUBJECT: Invitation to Bid – Alaska Regional Fire Training Center Building Rehabilitation

DUE DATE: August 29, 2019, by no later than 2:00 PM

Bidders must acknowledge receipt of this Addendum in the appropriate place on the Bid Form. Failure to do so may result in the disqualification or rejection of the bid.

Note: Information in this addendum takes precedence over original information. All other provisions of the document remain unchanged.

General:

01-01 Plan Holder Question:

"In regards to the Kenai Fire Training Center Project, we request that "Reliable Controls "be added to the approved manufacturers list in spec section 230923-2.01. We feel that this is a superior product and typically lower in cost than other systems."

Response: Not approved, the submitted product data does not provide enough information to evaluate if Reliable Controls can meet the requirements of a complete DDC system as specified and the requirements of 23 09 023 – 1.05.

01-02 Plan Holder Question:

"EPDM Section 07-55-00-1 Description calls out Fully adhered roof system 1.02 A calls for mechanically attached membrane, please clarify."

Response: Please see the attached revised specification 07 55 00, membrane 0shall be fully adhered.

01-03 Plan Holder Question:

"Drawings A6.1 R1, R1,R3 call out to demo and replace ballast pavers please clarify if we are to replace with new ballast pavers."

Response: Please see the attached revised sheet A6.1. Pavers shall be demo'd, please remove the reference to replacing the ballast pavers on sheet A6.1.

01-04 Plan Holder Question:

"Drawings on A6.3 #2-8 call out R1,R2,R3 /A6.1 for reference for roof replacement details should this be R1,R2,R3 on A6.3?"

Response: Please see the attached revised sheet A6.3.

01-05 Plan Holder Question:

"Specification calls out 120 mph wind warranty with ½" Dens Deck cover board. Manufactures have traditionally require minimum 5/8" dens deck for 120 mph wind warranty's."

Response: Please see the attached revised specification 07 55 00, coverboard shall be 5/8" thick.

01-06 Plan Holder Question:

"Drawings detail A6.3 #1 calls for 22 gauge metal coping and 18 gauge cleat specification section 07-62-00 page 3 - 2.03,G calls for 24 gauge coping with 22 gauge cleat. Please clarify thickness desired for parapet coping. "

Response: Coping shall be 24 gauge embossed aluminum coping with 22 gauge cleat.

01-09 Plan Holder Question:

"On A1.2 it says, Contactor shall repair all interior finishes that are damaged due to roof drain removal, leader repair, or any adjacencies as required to do the work. Does anyone have more information on this? Like at least a reflected ceiling plan?"

Response: Please see the attached original reflected ceiling plans for reference.

01-10 Plan Holder Question:

"On E2.2 sheet note 1. It says, Repair ceilings in locations where new fixture dimensions may differ from the demolished fixture. Does the owner have any more details for this?"

Response: Please see the attached original reflected ceiling plans for reference.

01-11 Plan Holder Question:

"When we end up replacing ceiling tile or patching and painting GWB from question 1 &2, do you have direction on how much wall needs to be painted such as corner to corner, and can new

ceiling tile need to be put in randomly or does the entire room need to be replaced if over a certain number of tile are replaced?"

Response: Please repaint walls from corner to corner, replace only the ceiling tile that are damaged.

01-12 Plan Holder Question:

"Has there been an environmental assessment done for this project? If not are we to assume this building free of asbestos, lead, and all other hazardous materials?"

Response: An Environmental Categorical Exclusion has been completed by the FAA. The facility was originally constructed in 1998.

01-13 Plan Holder Question:

On both projects as part of the bid form we have pages of breakdowns plus the bid summery. The bid summary does not take into account any add alts or deductive alts. We wanted to verify that the add and deductive alts only go on the schedule breakdown pages and not on the bid summery.

Response: The add alts and deductive alts go on the schedule breakdown pages only.

01-14 Plan Holder Question:

"Drawings show that a vapor barrier is to be installed above the 5/8" underlayment REF details R1, R2 and R3 A 6.3. Specification Section 07 55 00 has no vapor barrier material called out. Please provide vapor barrier material preferred."

Response: Please see the attached revised specification 07 55 00, underlayment shall be 5/8" and a vapor barrier has been provided in other materials.

01-15 Plan Holder Question:

"Specification Section 07 55 00 -1.13. A says to provide a manufacturer's 20-year 120 MPH warranty. The roof drawings show the cover board to be $\frac{1}{2}$ " Dens Deck cover board. I have been advised by the manufacturer's representative that a 5/8" cover board will be required. Please confirm the thickness of the cover board will be changed to meet the manufacturer's requirements."

Response: Please see the attached revised specification 07 55 00, 5/8" cover board shall be used.

01-16 Plan Holder Question:

"What is the thickness of the existing plywood shown on R1 Roof Type? There is a minimum thickness required for the high wind warranty."

Response: Existing plywood is $\frac{3}{4}$ " thick.

01-17 Plan Holder Question:

"Please confirm that the substrate board is to mechanically attached and the vapor barrier, insulation, cover board and membrane are to be adhered."

Response: This is confirmed.

01-18 Plan Holder Question:

"What is the type and thickness of the existing insulation?"

Response: Existing insulation is 6" thick rigid insulation.

01-19 Plan Holder Question:

"Who will be responsible for recalibrating the antennas?"

Response: The city of Kenai will be responsible for re-calibrating the antennas.

01-20 Plan Holder Question:

"Who will be responsible for removing and reinstalling the antennas located on the roof?"

Response: Contractor shall remove the antennas from the roof, store during construction and move antennas back into place after construction.

01-21 Plan Holder Question:

"Who will be responsible for recalibrating the antennas?"

Response: The city of Kenai will be responsible for re-calibrating the antennas.

01-22 Plan Holder Question:

"Please provide a staging location for stored material."

Response: A roughly 100 foot by 80 foot gravel staging area shall be provided to the north of the main parking lot.

01-23 Plan Holder Question:

"Will roof access be allowed for loading materials at the garage bay doors?"

Response: Yes at coordinated times with the city and training classes.

01-24 Plan Holder Question:

"Please identify R1, R,2 and R3 Roof areas with gridline reference."

Response: Please see the attached revised plans.

01-25 Plan Holder Question:

"Is the entry canopy roof R-3? Is the canopy roof deck structurally sloped? If it is not sloped, are we to provide tapered insulation sloped to achieve $\frac{1}{4}$ ":12" and a cover board?"

Response: Entry canopy roof R-3 is structurally sloped.

01-26- Plan Holder Question:

"The siding on the building appears to be aluminum with an embossed finish. Specification Section 07 62 00 calls for 24 gauge steel. Please confirm coping material and use."

Response: Coping shall be 24 gauge embossed aluminum coping with 22 gauge cleat.

01-26 Plan Holder Question:

"On a related note, it was advised that the Pre-Bid Conference Handout (5 pages) was also going to be included in an addendum."

Response: Please see the attached copy of the agenda handout.

01-27 Plan Holder Question:

"What is the engineer's estimate?"

Response: Engineer's estimate is not available.

01-28 Plan Holder Question:

"Do you require union to all of your projects or contracts?"

Response: If the question is regarding the use of union labor, the answer is no. Wage rates must comply with Federal Davis Bacon Wages and State of Alaska Prevailing Wage Rates provided with Addendum #1.

01-29 Plan Holder Question:

"Is the bid date still August 29 at 02:00 PM?"

Response: The bid date is unchanged.

01-30 Plan Holder Question:

"Would there be a plan holders/bidders list available? Could you also send me a copy if you have one?"

Response: Please see the attached current plan holders list.

01-31 Plan Holder Question:

"I noticed that project updates (cost estimate, attendance sheets, plan holders list, addendum, bid tabs, awards) were posted on the city website <u>https://www.kenai.city/rfps</u>, to help trim down number of inquiries from us is it a policy to post all project updates through this website?"

Response: Yes.

01-32 Mechanical Directive: Add EF-7 to project as indicated as revision #2 on sheets M0.2, M0.3 and M2.2.

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SECTION 07 55 00

EPDM ROOFING

PART 1 GENERAL

1.01 DESCRIPTION

A. The project consists of installing Fully Adhered Roofing System as outlined below:

Apply the Fully Adhered EPDM Roofing System in conjunction with Rigid Insulation over the existing roof decks.

1.02 EXTENT OF WORK

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a Sure-Tough .060 inch thick reinforced EPDM membrane fully adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.
- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.
- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

1.03 SUBMITTALS

- A. Prior to starting work, the roofing contractor must submit the following:
 - 1. Shop drawings showing layout, details of construction and identification of materials.
 - 2. Sample of the manufacturer's Membrane System Warranty.
 - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
 - 4. Certification from the membrane manufacturer indicating the fasteners are capable of providing a static backout resistance of 10 inch pounds minimum is required.
 - 5. Certification of the manufacturer's warranty reserve.
- B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with

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the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

- B. Comply with the manufacturer's written instructions for proper material storage.
 - 1. Store materials, except membrane, between 60F and 80F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60F minimum temperature before using.
 - 2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.05 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

1.06 USE OF THE PREMISES

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

1.07 EXISTING CONDITIONS

A. If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.08 JOB SITE PROTECTION

A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal

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(properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

1.09 SAFETY

A. The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. Safety shall be the responsibility of the roofing contractor. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.10 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.

1.11 QUALITY ASSURANCE

- A. The manufacturer must have a minimum of 20 years experience in the manufacturing of vulcanized thermal set sheeting.
- B. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

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- C. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
- E. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- F. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- G. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a nonsales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventytwo (72) hours prior to the manufacturer's final inspection.

1.12 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Manufacturers Fully Adhered Roofing System specification, - Application, for General Job Site Considerations.

- A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

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1.13 WARRANTY

- A. Provide manufacturer's 20 year Membrane System Warranty covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 120 mph measured at 10 meters above ground level.
- В. Pro-rated System Warranties shall not be accepted.
- C. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

PART 2 PRODUCTS

2.01 **GENERAL**

- A. The basis of design for all components of the specified roofing system shall be products of Carlisle SynTec Incorporated or accepted by the Architect as compatible. i.
 - Firestone Building Products.
- Β. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be manufactured and supplied by the roofing system manufacturer and covered by the warranty.
- C. Submit written request for approval of substituation per section 016000.

2.02 MEMBRANE

Furnish Sure-Seal .060 inch thick reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) conforming to the minimum physical properties of ASTM D4637. The membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections.

2.03 **ROOF INSULATION**

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes totallying the R-Value indicated on drawings.
- Molded-Polystyrene Board (EPS) Insulation: ASTM C 578 Type II, 1.35-lb/cu. ft. minimum density. The Β. R-Value for calculation purposes for Type II EPS insulation is to be R-4.55 per inch thickness, measured at 40 degrees F.
 - 1. Available Manufacturers:
 - a. Insulfoam, Inc.
 - b. Approved equal.
 - 2. Thickness: As indicated
 - 3. Maximum dimension: 4 feet by 4 feet

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- C. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, felt facer on both major surfaces. The R-value for calculation purposes for Polyisocyanurate insulation is to be R-5.0 per inch thickness.
 - 1. Available Manufacturers:
 - a. Atlas Roofing Corporation.
 - b. Celotex Corporation.
 - c. Firestone Building Products Company.
 - d. Hunter Panel, Inc.
 - e. Johns Manville International, Inc.
 - f. RMAX
 - g. Approved equal.
 - 2. Thickness: As indicated
 - 3. Maximum dimension 4 feet by 4 feet
- D. Cellulosic-Fiber Board Insulation: ASTM C 208, Type II, Grade 1, fibrous-felted wood fiber or other cellulosic-fiber and water-resistant binders, asphalt impregnated on all six surfaces, chemically treated to resist deterioration.
 - 1. Available Manufacturers:
 - a. CMI-Temple Inland.
 - b. Firestone Building Products Company.
 - c. Georgia-Pacific Corporation.
 - d. Structoduck.
 - e. Approved equal.
- E. Tapered Insulation: Provide factory-tapered insulation boards fabricated to form a minimum finished slope of 1/8-inch per 12 inches (1:48), unless otherwise indicated.
 - 1. Minimum thickness: 1/2-inch
- F. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricates to slopes as indicated.

2.04 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.

B. Insulation Cant Strips: ASTM C 728, perlite insulation board; OR –ASTM C 208 Type II, Grade 1, cellulosic-fiber insulation board.

2.05 ADHESIVES AND CLEANERS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

- A. Bonding Adhesive: Sure-Seal 90-8-30A
- B. Splicing Cement: Sure-Seal EP-95 Splicing Cement
- C. Splice Tape and Primer: Sure-Seal SecurTAPE and HP-250 Primer
- D. Cleaning Solvent: Sure-Seal Splice Cleaner or Weathered Membrane Cleaner
- E. Internal seam sealant: Sure-Seal In-Seam Sealant
- F. External seam sealant: Sure-Seal Lap Sealant
- G. Sealer: Sure-Seal Pourable Sealer

2.06 RELATED MATERIALS

- A. Povide all Carlisle approved related flashings, adhesives and to provide a watertight assemble qualifying for the above stated warranty reqirements.
- 2.07 METAL EDGING AND MEMBRANE TERMINATIONS
 - A. Provide all metal edging and terminations as defined in drawings. Color as selected by Architect.
- 2.08 OTHER MATERIALS
 - A. Provide 5/8" "Dens-Deck" over all metal decks.
 - B. Provide manufacturer's recommended and approved vapor barrier for the warrantied EPDM Roofing System. For basis of design use Firestone V-Force Vapor Barrier Membrane.
 - C. Provide 5/8" "Dens-Deck" recovery board over all insulation.
 - E. Provide spray applied galvanizing to underside of all fasteners penetrating metal decking.

PART 3 EXECUTION

- 3.01 GENERAL
 - A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
 - B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.
- 3.02 INSULATION PLACEMENT

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- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.
- B. Secure insulation to the substrate with the required adhesive in accordance with the manufacturer's specifications.

3.03 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour prior to application. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
- B. Secure the membrane with Carlisle approved adhesion system.
- D. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.

3.04 MEMBRANE SPLICING (Adhesive Splice)

- A. Membrane splices must be a minimum of 6 inches wide where mechanical attachment is required along the length of the membrane. Membrane splices at the end roll sections (the width of the membrane) must be a minimum of 3 inches wide.
- B. When using PRE-KLEENED Reinforced EPDM Membrane, cleaning the splice area is not required unless contaminated with field dirt, adhesive or other residue. To remove accumulated dirt, footprints, etc., scrub the membrane sheets with Splice Cleaner or HP-250 Primer.
- C. Apply Splicing Cement and In-Seam Sealant in accordance with the manufacturer's specifications and roll the top sheet onto the mating surface.
- D. Roll the splice with a 2 inch wide steel roller and wait at least 2 hours before applying Lap Sealant to the splice edge following the manufacturer's requirements.
- E. Field splices without In-Seam Sealant must be overlaid with uncured flashing.

3.05 MEMBRANE SPLICING (Tape Splice)

- A. Tape splices where fastening plates are located (along the length of the membrane) must utilize 6 inch wide Splice Tape. Tape splices at end roll sections (along the width of the membrane without fastening plates) shall utilize 3 inch wide Splice Tape.
- B. Overlap adjacent sheets and mark a line 1/2 inch out from the top sheet.
- C. Apply Sure-Seal HP-250 Primer to splice area.
- D. Position Splice Tape onto bottom membrane sheet with the edge of the release film along the marked line.
- E. Remove the release film and press the top sheet onto the tape using hand pressure. Roll the splice

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with a 2 inch wide steel roller.

- F. Install a 6 inch wide section of Pressure-Sensitive Flashing or Elastoform Flashing over all field splice intersections and seal edges of flashing with Lap Sealant.
- G. The use of Lap Sealant with tape splices is optional except at tape overlaps and cut edges of reinforced membrane where Lap Sealant is required.

3.06 FLASHING

- A. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable.
- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.07 WALKWAYS

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the drawings.
- B. Adhere walkways to the EPDM membrane in accordance with the manufacturer's specifications.

3.08 DAILY SEAL

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
- B. Use Sure-Seal Pourable Sealer or other acceptable membrane seal in accordance with the manufacturer's requirements.

3.09 CLEAN UP

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION 07 55 00

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- CEILING HEIGHT SHALL BE 9'-0" UNLESS NOTED OTHERWISE ON PLAN OR ROOM FINISH SCHEDULE.
- 2 SURVEY FIELD CONDITIONS AND VERIFY WORK IS BUILDABLE AS SHOWN OR IF ANY DISCREPANCIES ARE PRESENT REFER TO MECHAN-ICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS OF THESE SYSTEMS [DUCT SIZING, CIRCUITING, ETC.]. LOCATION OF SWITCHES SHALL BE AS SHOWN ON LIGHTING PLAN, WHERE DISCREPANCIES OCCUR THE ARCHITECTURAL DRAWINGS SHALL GOVERN.
- 3 SEE FINISHES NOTES OR SPECIFICATIONS FOR ACOUSTICAL TILE CEIL-ING AND GYPSUM BOARD PAINT DESCRIPTION.
- 4 INSTALL CEILING TILE HOLD DOWN CLIPS ALONG PARTITIONS AND FOR CEILING TILES LESS THAN FULL SIZE.
- 5 UNLESS OTHERWISE NOTED SCHEDULED DOWNLIGHTS, WALL WASHERS, SMOKE DETECTORS AND EXIT SIGNS SHALL BE CENTERED IN THE CELING THE. LIGHT FIXTURES AND HYAC GRILLES SHALL BE LOCATED IN ALIGNMENT WITH THE CELING GRID, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONFLICTS WITH THE SUSPENDED GRID SYSTEM AND OBTAIN WRITTEN CLARIFICATION PRIOR TO FIXTURE INSTALLATION.
- 6 CEILING TILE GRID HANGERS ARE NOT DESIGNED TO SUPPORT THE WEIGHT OF ADDITIONAL EDUIPMENT OR MATERIALS. CABLES. CONDUIT, MECHANICAL FIXTURES, ETC. SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE.
- 7 THE FINSHED CEILING SHALL BE TRUE AND LEVEL AND FREE FROM DAMAGED, WARPED OR SOLED TILES. INSTALL CEILING IN UNIFORM PLANE FREE FROM TWISTS OR WARPS.
- B INSTALL EDGE MOLDING AT INTERSECTION OF CEILING AND VERTICAL SURFACE. USE MAXIMUM LENGTHS, STRAIGHT, TRUE AND LEVEL. MITRE CORNERS AND PROVIDE MOLDING AT OTHER JUNCTIONS WITH CEILING FINISHES.
- 9 LAY DIRECTIONAL PATTERN UNITS ONE WAY WITH PATTERN AS DIRECTED BY ARCHITECT.
- IO SUBMIT SHOP DRAWINGS SHOWING LOCATIONS, CRITICAL DIMENSIONS, OTHER CEILING FIXTURES AND GRID FOR REVIEW AND APPROVAL BY ARCHITECT PRIOR TO COMMENCING WORK.
- ALL GWB SOFFITS ABOVE COUNTERS AND CABINETRY SHALL BE 7-5/8 ABOVE FINISHED FLOOR UNLESS GTHERWISE NOTED ON PLAN OR ROOM FINISH SCHERULE.
- 12 ALL GWB SOFFITS AT CORRIDORS SHALL BE 7-9" UNLESS OTHERWISE NOTED ON PLAN OR ROOM FINISHED SCHEDULE.
- 13 THE FINISHED CEILING SHALL BE TRUE AND LEVEL AND FREE FROM DAMAGED, WARPED OR SOILED TILES, INSTALL CEILING IN UNIFORM PLANE FREE FROM TWISTS OR WARPS.

DUWER LEVEL REFLECTED CEILING PLAN A7.1 SCALE: 1/8"=1'-0"

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113

MEDIA

110

H=8-0

. н. 7′.9 О

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CORRIDOR

112

CONTROL

RECEPTION

H=8'

ROOM

1=8'-01

ENTRY

101 H=8.0

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. H=8'-0"

H=101-01

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DFFICE

H-T-9'

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H=9'-D"

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EXP CO

OFFICE

H=8'-0"

___CORR

JANITOR

FIRS AID

M 118 H=8'-0

W 120 H=8'-0

STAIR

ELEV.

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PUMP ROOM

EXP

125

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NOTES:

- SOFFIT SHALL BE LEVEL W/ HEAD OF ALUMINUM ENTRY IO \bigwedge
- \triangle SUPPLY DUCT SHIFTED
- SMOKE DETECTOR MOVED FROM COFFERED CEILING. \bigtriangleup
- \triangle RELOCATED LIGHT FIXTURES IN ELEC/PHONE #123.
- RELOCATED LIGHT FIXTURES IN WORK ROOM #126, ONE REMOVED. 逊



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Addendum #2 - For Reference



CEILING PLAN LEGEND 09000-5

			09000-5
::::	GYPSUM BOARD	<u> </u>	2 X 2 SUSPENDED ACOUSTICAL TILE TYPE 2 TYPE I AT RM IOI AND IO3
	2 X 4 SUSPENDED ACOUSTICAL TILE TYPE 3	EXP	EXPOSED STRUCTURE
	2 X 4 FLUORESCENT LIGHT FIXTURE		FLUSH SEAM METAL SOFFIT PANEL
	2 X 2 METAL SUSPENSION CEILING TILE TYPE 4 STRIP FLUORESCENT LIGHT FIXTURE	\boxtimes	SUPPLY AIR GRILLE
0	RECESSED LIGHT	\Box	RETURN AIR GRILLE
	RECESSED HPS LIGHT	oc _	CEILING CAMERA
0	PENDANT MOUNTED M.H. LIGHT FIXTURE	(5) A	SPEAKER
<u>~~~</u>	TRACK LIGHTING	D	SMOKE DETECTOR AND FIXED TEMP. HEAT DETECTOR
	EMERGENCY LIGHTS (SOME INCLUDE NL=NIGHT LIGHTS)	0	GAS FIRED UNIT HEATER
0	SURFACE MOUNTED FLOURESCENT FIXTURE		CLG/ROOF PENETRATION
0	SURFACE MOUNTED LIGHTING FIXTURE		
\otimes	SURFACE MOUNTED EXIT SIGN		VIDED FROJECTOR
Q	OH DOOR MOTOR	()	CEILING FAN
0	OH DOOR MOTOR (FUTURE)	8	CEILING MOUNTED MICROPHONE



Revisions

A DECEMBER OF STREET



CEILING PLAN NOTES

I CEILING HEIGHT SHALL BE 9'-0" UNLESS NOTED OTHERWISE ON PLAN OR ROOM FINISH SCHEDULE.

09000-3

- 2 SURVEY FIELD CONDITIONS AND VERIFY WORK IS BUILDABLE AS SHOWN OR IF ANY DISCREPANDES ARE PRESENT. REFER TO MECHAN-ICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS OF THESE SYSTEMS (DUCT SIZING, CIRCUITING, ETC.). LOCATION OF SWITCHES SHALL DE AS SHOWN ON LIGHTWO FLAN, WHERE DISCREPANCIES OCCUR THE ARCHITECTURAL DRAWINGS SHALL GOVERN.
- 3 SEE FINISHES NOTES OR SPECIFICATIONS FOR ACOUSTICAL TILE CEIL-ING AND GYPSUM BOARD PAINT DESCRIPTION.
- 4 INSTALL CEILING TILE HOLD DOWN CLIPS ALONG PARTITIONS AND FOR CEILING TILES LESS THAN FULL SIZE.
- 5 UNLESS OTHERWISE NOTED, SCHEDRILED DOWNLIGHTS, WALL WASHERS, SMOKE DETECTORS AND EXIT SIGNS SHALL BE CENTERED IN THE CELING THE. LIGHT FIXTURES AND HVAC GRILLES SHALL BE LOCATED IN ALIGNMENT WITH THE CELING GRID, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL NOTEY THE ARCHITECT OF ANY CONFLICTS WITH THE SUSPENDED GRID SYSTEM AND OBTAIN WRITTEN CLARIFICATION PRIOR TO FIXTURE INSTALLATION.
- 5 CEILING TILE GRID HANGERS ARE NOT DESIGNED TO SUPPORT THE WEIGHT OF ADDITIONAL EQUIPMENT OR MATERIALS, CABLES, CONDUIT, MECHANICAL FIXINES, ETC. SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE.
- 7 THE FINISHED CEILING SHALL BE TRUE AND LEVEL AND FREE FROM DAMAGED, WARPED OR SOILED TILES. INSTALL CEILING IN UNIFORM PLANE FREE FROM TWISTS OR WARPS.
- B INSTALL EDGE MOLDING AT INTERSECTION OF CEILING AND VERTICAL SURFACE. USE MAXIMUM LENGTHS, STRAIGHT, TRUE AND LEVEL. MITRE CONNERS AND PROVIDE MOLDING AT OTHER JUNCTIONS WITH CEILING FINISHES.
- 9 LAY DIRECTIONAL PATTERN UNITS ONE WAY WITH PATTERN AS DIRECTED BY ARCHITECT.
- IO SUBMIT SHOP DRAWINGS SHOWING LOCATIONS, CRITICAL DIMENSIONS, OTHER CEILING FIXTURES AND GRID FOR REVIEW AND APPROVAL BY ARCHITECT PRIOR TO COMMENCING WORK.
- II ALL GWB SOFFITS ABOVE COUNTERS AND CABINETRY SHALL BE 7-5/8 ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON PLAN OR ROOM FINISH SCHEDULE.
- 12 ALL GWB SOFFITS AT CORRIDORS SHALL BE 7'-9' UNLESS OTHERWISE NOTED ON PLAN OR ROOM FINISHED SCHEDULE.
- I3 THE FINISHED CEILING SHALL BE TRUE AND LEVEL AND FREE FROM DAMAGED, WARPED OR SOILED TILES. INSTALL CEILING IN UNIFORM PLANE FREE FROM TWISTS OR WARPS.

UPPER LEVEL REFLECTED CEILING PLAN A7.1 SCALE: 1/8"=1"-0"

NOTES:

- RELOCATED AND ADDED LIGHT FIXTURES IN MEZZANINE #230. \triangle
- \triangle RELOCATED AND ADDED LIGHT FIXTURES IN MECH. #232.



LOCKING CLIP TO FASTEN CROSS RUNNER TO MAIN RUNNER SPLICES AND INTERSECTIONS OF RUNNERS SHALL BE ATTACHED WITH MECHANICAL INTERLOCKING CONNECTORS SUCH AS POP RIVERS, SCREWS, PINS, PLATES, WITH BENT TABS, OR OTHER APPROVED CONNECTORS, DESIGN CONNECTORS FOR 2& DESIGN LOAD OR ULTIMATE AXIAL TENSION OR COMPRESSION MIR. 66 POUNDS)

09500-2

CEILING GRID DETAIL

AT.2 SCALE: NONE

SEISMIC STRUT D SPLAY BRACE 12 GA. VERTICAL - 3" TURNS Min. IN 1?" TYP. HANGER WIRE AT 4'-0" O.C. 4 DIRECTION SPLAY WIRE BRACING AT 12'-0" O.C. MAX. ALL WIRES ATTACH TO MAIN RUNNER SPLICE CROSS RUNNER -MAIN RUNNER CEILING GRID DETAIL A7.2 SCALE: NONE 09500-1



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CEILING PLAN LEGEND

				09000-3
	::.:	GYPSUM BOARD	++	2 X 2 SUSPENDED ACOUSTICAL TILE TYPE 2
		2 X 4 SUSPENDED ACOUSTICAL TILE TYPE 3	EXP	EXPOSED STRUCTURE
		2 X 4 FLUORESCENT LIGHT FIXTURE		FLUSH SEAM METAL SOFFIT PANEL
		2 X 2 METAL SUSPENSION CEILING TILE TYPE 4 STRIP FLUORESCENT LIGHT FIXTURE	\boxtimes	SUPPLY AIR GRILLE
	Ø	RECESSED LIGHT FIXTURE		RETURN AN GRIELE
		RECESSED HPS LIGHT FIXTURE	(1)	00C 1//CD
	0	PENDANT MOUNTED M.H. LIGHT FIXTURE	•	SPEAKER
	<u>***</u>	TRACK LIGHTING	D	SMOKE DETECTOR
	₽	EMERGENCY LIGHTS		
	$\Box \bigcirc$	SURFACE MOUNTED FLOURESCENT FIXTURE	P	GAS FIRED UNIT HEATER
	0	SURFACE MOUNTED LIGHTING FIXTURE		CLG/ROOF PENETRATION
	\otimes	SURFACE MOUNTED EXIT SIGN		VIDEO PROJECTOR
	¢	OH DOOR MOTOR	\bigtriangledown	CEILING FAN
	Q	OH DOOR MOTOR (FUTURE))	CEILING MOUNTED MICROPHONE



GENERAL NOTES

- AFTER DEMOLITION OF THE EXISTING ROOFING, IF ANY 1. DETERIORATED DECKING IS DISCOVERED, EITHER THE ARCHITECT OR PROJECT MANAGER SHALL BE CONTACTED TO VERIFY THE EXTENT OF DAMAGE PRIOR TO REPLACEMENT OR COVERING.
- 2. EXISTING EQUIPMENT CURBS AND PARAPET WALLS SHALL BE STRIPPED OF ALL ROOFING MATERIAL AND CLEANED OF ALL FASTENERS PRIOR TO RE-BUILDING.
- FIELD VERIFY ALL EXISTING ROOF SLOPES, ELEVATIONS, 3. SQUARE FOOTAGE'S, AND DIMENSIONS.

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GRAPHIC

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ROOF ¢

23'-113"

3 A6.1

FXISTING ROOF DRAINS AND

DETAIL 1/A6.2

SLOPE

OVERFLOWS TO BE REPLACED SEE

TOP OF INSULATION EL.129'-3"

(3) (A6.1)

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- VERIFY USE, QUANTITY, TYPE, AND SIZE OF ROOF PENETRATIONS PRIOR TO EXTENDING OR REMOVAL. COORDINATE WITH THE OWNER ON PENETRATIONS THAT ARE ABANDONED.
- 4. AFTER DEMOLITION OF EXISTING ROOFING, NOTIFY ARCHITECT TO VERIFY SLOPE OF ORIGINAL ROOF CONSTRUCTION.
- 5. EXISTING VENTS, CONDUIT, ETC. TO BE CLEANED OF ALL EXISTING ASPHALTIC COATINGS PRIOR TO APPLYING NEW ROOF MEMBRANE PER MANUFACTURER'S RECOMMENDATIONS.



EXISTING CONDITIONS / DEMO ROOF PLAN 1

(в`

72'-0"

24'-0"

LINE OF VALLEY

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RD

ROOF · HATCH |

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ROOF DECK

ROOF R1, REMOVE ALL

MEMBRANES DOWN TO

IRMA PAVERS, GRAVEL, INSULATION AND ROOFING

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7'-2¹/₈" 4

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GENERAL NOTES

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GRAPHIC SCALE:

ROOF C

- AFTER DEMOLITION OF THE EXISTING ROOFING, IF ANY 1. DETERIORATED DECKING IS DISCOVERED, EITHER THE ARCHITECT OR PROJECT MANAGER SHALL BE CONTACTED TO VERIFY THE EXTENT OF DAMAGE PRIOR TO REPLACEMENT OR COVERING.
- 2. EXISTING EQUIPMENT CURBS AND PARAPET WALLS SHALL BE STRIPPED OF ALL ROOFING MATERIAL AND CLEANED OF ALL FASTENERS PRIOR TO RE-BUILDING.

23'-11

3 A6.3

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SLOPE

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(3) (A6.3)

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RE-ROOF PLAN

FIELD VERIFY ALL EXISTING ROOF SLOPES, ELEVATIONS, 3. SQUARE FOOTAGE'S, AND DIMENSIONS.











ABBREVIATIONS

-1"

ADA	AMERICANS WITH DISABILITIES ACT
AFF	AVERAGE FLUID TEMPERATURE
AL AMB	ALUMINUM AMBIENT
AMPS	AMPERES
APD ASME	AIR PRESSURE DROP AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BDD	BACKDRAFT DAMPER
BLDG BTUH	Building British Thermal Unit Per Hour
C/A	COMBUSTION AIR
CFM	COOLING GLYCOL RETURN
CGS	COOLING GLYCOL SUPPLY
CW	COLD WATER
Ø	DIAMETER
DB	DRY BULB
dB DEG	DECIBELS
(E)	EXISTING
E/A EA	EXHAUST AIR FACH
EAT	ENTERING AIR TEMPERATURE
EDB EFT	ENTERING DRY BULB TEMPERATURE ENTERING FLUID TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB TEMPERATURE ENTERING WATER TEMPERATURE
EXH	EXHAUST
°⊦ FCO	FLOOR CLEAN OUT
FD	FIRE DAMPER
FEA	FINS PER FOOT
FPM	FEET PER MINUTE
FSD	FIRE SWORE DAMPER
G	NATURAL GAS
GPH	GALLONS PER HOUR
GPM GR	GALLONS PER MINUTE HEATING GLYCOL RETURN
GS	HEATING GLYCOL SUPPLY
H HD	HEIGHT HEAD
HGR	HEATING GLYCOL RETURN
HGS HR	HEATING GLYCOL SUPPLY HOUR
HW	HOT WATER
HWC	HOT WATER CIRCULATED
HWR	HEATING WATER RETURN
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IMC	INTERNATIONAL MECHANICAL CODE
LAT	LEAVING AIR TEMPERATURE POUNDS
LAT	LEAVING AIR TEMPERATURE
LDB LF	LEAVING DRY BULB TEMPERATURE LINEAL FEET
LFT	LEAVING FLUID TEMPERATURE
MAX	LEAVING WATER TEMPERATURE MAXIMUM
MBH	THOUSAND BTU PER HOUR
MEA	MANUFACTURER
MFS	MAXIMUM FUSE SIZE
MOP	MAXIMUM OVERCURRENT PROTECTION
MPG	MEDIUM PRESSURE GAS
N.C.	NORMALLY CLOSED
N.O. 0/A	NORMALLY OPEN OUTSIDE AIR
OPD	OVERCURRENT PROTECTION DEVICE
PD	PRESSURE DROP
P.G.	PROPYLENE GLYCOL
PH	PHASE POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
P	PROPANE
R/A RH	RETURN AIR RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
S/A SD	SUPPLY AIR STORM DRAIN
SP	STATIC PRESSURE
SS SQ	STAINLESS STEEL SQUARE
T/A TSP	TRANSFER AIR
TSTAT	THERMOSTAT
TYP	TYPICAL
V	VENT
VFD VTR	VARIABLE FREQUENCY DRIVE VENT THROUGH ROOF
WC	WATER COLUMN
WG WCO	WATER GAGE WALL CLEAN OUT
W	WASTE
WPD	WATER PRESSURE DROP
YCO	YARD CLEAN OUT

WATER CHILLER SCHEDULE

WATER ONEEDEE															
								EVAPORATOR							
					NOMINAL	AMB		FLOW RATE	FPD			ELI	ECTRICA	L DATA	
l	TAG	MFGR / MODEL	SERVICE	REFRIGERANT	TONS	TEMP	FLUID	(GPM)	(FT HD)	EFT	LFT	MCA	MOP	VOLTS/PH	REMARKS
[CH-1	TRANE / CGAM040	AHU-1 COOLING COIL	R410A	40	90°F	40% P.G.	90.5	<28′	52°F	42°F	94.6	110	460/3	AIR COOOLD, EXTERIOR MOUNTED, HELICAL ROTARY TYPE COMPRESSORS

FAN SCHEDULE

17114												
				AIRFLOW	ESP			MOT	FOR DATA			
TAG	MFGR / MODEL	SERVICE	FAN TYPE	(CFM)	(IN WG)	DRIVE	SONES	HP	VOLTS/PH	REMARKS		
EF-1	PENN / DX30B	APPARATUS BAY EXHAUST	CENTRIFUGAL	8,200	0.375"	BELT	<16.0	1-1/2	460/3	INTERLOCK WITH MAKE-UP AIR UNIT		
EF-2	EXISTING	COMPRESSOR ROOM EXHAUST	CENTRIFUGAL	4,720	0.25"	DIRECT		1	460/3	existing fan		
EF-3	PENN / DX08B	RESTROOM EXHAUST	CENTRIFUGAL	700	0.50*	BELT	<9.0	1/4	120/1	VARIABLE SPEED CONTROLLER MOUNTED UNDER MOTOR DOME		
EF-4	PENN / DX06B	RESTROOM EXHAUST	CENTRIFUGAL	200	0.25*	BELT	<7.0	1/4	120/1	VARIABLE SPEED CONTROLLER MOUNTED UNDER MOTOR DOME		
EF-5	EXISTING	SHOWER RESTROOM EXHAUST	CENTRIFUGAL	1,210	0.50"	DIRECT	v	1/4	120/1	EXISTING FAN		
EF-6	EXISTING	APPARATUS BAY EXHAUST								Existing fan		
EF-7	GREENHECK / CSP-A	APPARATUS BAY EXHAUST	CENTRIFUGAL	220	0.50*	DIRECT	<4.0	FR	120/1	UNIT MOUNTED VARIABLE SPEED CONTROLLER FOR BALANCING		

PREBID REQUIREMENTS

BIDDING CONTRACTORS SHALL REVIEW EXHIBIT DRAWINGS FROM ORIGINAL DESIGN AND WALK THROUGH THE FACILITY TO REVIEW EXISTING PNEUMATIC SYSTEM AND THE EQUIPMENT BEING CONTROLLED BY IT. CONTRACTOR TO REPORT ANY ADDITIONAL SCOPE OF WORK NOT DESCRIBED IN THE BIDDING DOCUMENTS THEY OBSERVE TO THE OWNER BEFORE BIDDING:

OPERATION MODE TIME SCHEDULES

SYSTEMS SHALL BE PROVIDED WITH INDEPENDENT OCCUPIED LINOCCUPIED START-UP AND OVERRIDE MODE SCHEDULES AS APPLICABLE. PROVIDE GRAPHIC INPUT AND DISPLAY INTERFACE FOR ALL SCHEDULES. PROVIDE MANUAL ACTIVATED UNOCCUPIED OVERRIDE MODE FOR ALL SYSTEMS. OCCUPIED UNOCCUPIED, START-UP AND OVERRIDE MODES SHALL INCLUDE NOT LIMITED TO THE FOLLOWING:

HYDRONIC HEATING AND AIR HANDLING SYSTEMS

- OCCUPIED OPERATION INITIALLY SET FOR 6 AM TO 6 PM. (ADJUSTABLE). MONDAY THROUGH FRIDAY (ADJUSTABLE).
- START-UP OPERATION SHALL START BEFORE OCCUPIED MODE WITH OPTIMUM START DETERMINATION BASED ON BUILDING TRENDING. DISPLAY CURRENT START_UP START TIME.
- OVERRIDE OPERATION SHALL RUN FOR 4 HOURS (ADJUSTABLE).
- LINOCCUPIED OPERATION AT ALL OTHER TIMES NOT REFERENCED ABOVE AND HOLIDAYS. HOLIDAY SCHEDULE (ADJUSTABLE).

POWER FAILURE START-UP

UPON BUILDING POWER RESTORATION AFTER A POWER FAILURE, THE BUILDINGS MECHANICAL SYSTEMS SHALL RESTART. PROVIDE TIME DELAY BETWEEN EQUIPMENT START UPS TO AVOID POWER SURGE.

GLYCOL MIX TANKS (GT-1 AND GT-2)

INTEGRAL CONTROLS SHALL CONTROL PUMP TO MAINTAIN SYSTEM PRESSURE SETPOINT. PROVIDE LOW LEVEL ALARM PANEL WITH SELECTABLE AUDIBLE ALARM AND REMOTE MONITORING DRY CONTACTS.

NO CONTROL BY DDC SYSTEM. MONITORING BY DDC SYSTEM AS INDICTED BELOW

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- SYSTEM PRESSURE STATUS
- SYSTEM LOW PRESSURE ALARM
- SYSTEM LOW PRESSURE ALARM SETPOINT (5 PSIG, ADJUSTABLE) LOW LEVEL ALARM

DOMESTIC HOT WATER GENERATOR SYSTEM (EXISTING)

INTEGRAL CONTROLS SHALL MAINTAIN A TEMPERATURE OF 120°F (ADJUSTABLE MANUALLY SET).

NO CONTROL BY DDC SYSTEM. MONITORING BY DDC SYSTEM AS INDICTED BELOW.

- SYSTEM INDICATION
- GRAPHIC INTERFACE

HEAT

- BUILDING HOT WATER SUPPLY WATER TEMPERATURE
- HIGH TEMPERATURE ALARM (>125°F, ADJUSTABLE)

BOILERS AND BOILER CIRCULATION PUMPS (B-1 AND B-2, BC-1 AND BC-2)

BOILER'S INTEGRAL CONTROLS SHALL BE CAPABLE OF COMMUNICATING WITH EACH OTHER. ALLOWING SEQUENCING OF ALL BOILERS TO OPTIMIZE BOILER PLANT ENERGY EFFICIENCY. THE BOLLER'S INTEGRAL CONTROLS SHALL BE CAPABLE OF PROVIDING CONTROL AS FOLLOWS.

BOILERS SHALL MAINTAIN BUILDING SUPPLY TEMPERATURE SETPOINT. THE BUILDING SUPPLY TEMPERATURE SETPOINT SHALL RESET LINEARLY BETWEEN 120°F AND 180°F BASED ON AN OUTDOOR AIR RESET SCHEDULE BETWEEN 65°F AND 10°F RESPECTIVELY. ALL RESET TEMPERATURE SETPOINTS SHALL BE AD ILISTABLE. BOILER CONTROLLER SHALL ENABLE THE BOILER ON OUTSIDE AIR TEMPERATURES OF 65°F AND LOWER OR WITH CALL FOR DOMESTIC HOT WATER HEAT. BOILER CONTROLLER SHALL DISABLE THE BOILER ON OUTSIDE AIR TEMPERATURES OF 66°F AND HIGHER AND NO CALL FOR DOMESTIC HOT WATER

BOILER'S INTEGRAL CONTROLS SHALL MODULATE ITS BURNER AND OPERATE THE BOILER CIRCULATION PUMP TO MAINTAIN INTERNAL AQUASTAT TEMPERATURE. THE INTERNAL AQUASTAT TEMPERATURE SETPOINT SHALL RESET LINEARLY BETWEEN 130°F AND 190°F BASED ON AN OUTDOOR AIR RESET SCHEDULE BETWEEN 65°F AND 10°F RESPECTIVELY. ALL RESET TEMPERATURE SETPOINTS SHALL BE ADJUSTABLE.

SEQUENCE OF OPERATIONS

NIGHT SETBACK TEMPERATURE SETPOINT (55°F, ADJUSTABLE)

• LOW SPACE TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)

OPERATION MODES SHALL BE CONTROLLED BY THE DDC CONTROLLER'S

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), TWO WAY

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), TWO WAY

CONTROL VALVE SHALL OPEN. PROVIDE UNOCCUPIED MODE TEMPERATURE SETBACK.

• HIGH SPACE TEMPERATURE INDICATION SETPOINT (75°F, ADJUSTABLE)

LOW SPACE TEMPERATURE ALARM

BASEBOARD (EXISTING)

OPERATION MODES:

INTERNAL CLOCK.

OCCUPIED MODE

START-UP MODE

OVERRIDE MODE

SYSTEM INDICATION

GRAPHIC INTERFACE

SPACE TEMPERATURE

CONTROL VALVE SHALL OPEN

UNOCCUPIED MODE (ADMIN AREAS)

SYSTEM SHALL OPERATE IN OCCUPIED MODE.

SYSTEM SHALL OPERATE IN OCCUPIED MODE

• LOW SPACE TEMPERATURE ALARM

RADIANT ZONES (CP-6 AND CP-10, EXISTING)

CONTROL BY DDC SYSTEM.

OPERATION MODES

INTERNAL CLOCK.

OCCUPIED MODE

UNOCCUPIED MODE

OPERATE IN OCCUPIED MODE

SYSTEM INDICATION

GRAPHIC INTERFACE

SPACE TEMPERATURE (EACH ZONE)

APPARATUS BAY ADJUSTABLE)

LOW SPACE TEMPERATURE ALARM

HIGH SPACE TEMPERATURE INDICATION

VALVE.

HIGH SPACE TEMPERATURE INDICATION

VALVE SHALL OPEN AND ZONE PUMP SHALL OPERATE

SPACE TEMPERATURE SETPOINT (70°F, ADJUSTABLE)

• NIGHT SETBACK TEMPERATURE SETPOINT (55°F, ADJUSTABLE)

• LOW SPACE TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)

OPERATION MODES SHALL BE CONTROLLED BY THE DDC CONTROLLER'S

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), CONTROL

SUPPLY FLUID TEMPERATURE TO ZONE SET MANUALLY AT ZONE'S TEMPERING

SPACE TEMPERATURE SETPOINT (65°F FOR ROOM 207, 60°F FOR

LOW SPACE TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)

• HIGH SPACE TEMPERATURE INDICATION SETPOINT (75°F, ADJUSTABLE)

• HIGH SPACE TEMPERATURE INDICATION SETPOINT (75°F, ADJUSTABLE)

CONTROL BY DDC SYSTEM

HIGH SPACE TEMPERATURE INDICATION

BOILER'S INTEGRAL CONTROLS SHALL SWITCH FROM NATURAL GAS TO PROPANE GAS ON DETECTION OF MINIMUM PRESSURE AT NATURAL GAS PIPING. PROVIDE ALL TRIM AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE CHAPTER 10.

NO CONTROL BY DDC SYSTEM. MONITORING BY DDC SYSTEM.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- SYSTEM STATUS
- OUTSIDE AIR TEMPERATURE
- BOILER ENABLE/DISABLE STATUS
- BOILER FIRING RATE
- BOILER CURRENT GAS SUPPLY
- BUILDING SUPPLY HEADER TEMPERATURE
- BUILDING RETURN HEADER TEMPERATURE BOILER SUPPLY HEADER TEMPERATURE
- BOILER RETURN HEADER TEMPERATURE
- BOILER TROUBLE ALARM

HEAT EXCHANGER (HE-1)

CONTROL BY DDC SYSTEM THREE WAY VALVE SHALL MODULATE TO MAINTAIN HEATING GLYCOL SUPPLY. TEMPERATURE SETPOINT.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- GLYCOL SUPPLY SETPOINT (120°F, ADJUSTABLE)
- HEATING WATER SUPPLY TEMPERATURE AT HEAT EXCHANGER
- HEATING WATER RETURN TEMPERATURE AT HEAT EXCHANGER
- HEATING GLYCOL SUPPLY TEMPERATURE AT HEAT EXCHANGER
- HEATING GLYCOL RETURN TEMPERATURE AT HEAT EXCHANGER
- HEATING GLYCOL SUPPLY TEMPERATURE DOWNSTREAM OF MIX VALVE
- DUCT REHEAT COIL (EXISTING)

UNOCCUPIED MODE (ADMIN AREAS)

SYSTEM SHALL OPERATE IN OCCUPIED MODE.

SYSTEM SHALL OPERATE IN OCCUPIED MODE.

SPACE TEMPERATURE SETPOINT (70°F, ADJUSTABLE)

SETBACK.

START-UP MODE

OVERRIDE MODE

SYSTEM INDICATION

GRAPHIC INTERFACE

SPACE TEMPERATURE

- CONTROL BY DDC SYSTEM OPERATION MODES:
- OPERATION MODES SHALL BE CONTROLLED BY THE DDC CONTROLLER'S
- INTERNAL CLOCK
- OCCUPIED MODE

- ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE). TWO WAY MODULATING CONTROL VALVE SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE SETPOINT.

MODULATING CONTROL VALVE SHALL MODULATE TO MAINTAIN ROBORD TEMPERATURE SETPOINT. PROVIDE UNOCCUPIED MODE TEMPERATURE

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE). TWO WAY

ADDENDUM 2 08.22.19
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awn: STH ecked: ACT
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2 of 15M
Copyright T3 Alaska, LLC

SNOWMELT ZONES (CP-7, CP-8 AND CP-9, EXISTING) CONTROL BY DDC SYSTEM OR PACKAGED SNOWMELT CONTROLLER. PROVIDE SNOW/MOISTURE SLAB TEMPERATURE SENSOR AT APPARATUS BAY APRON.

OPERATION MODES

SYSTEM INDICATION

SYSTEM STAUS

GRAPHIC INTERFACE

OUTSIDE AIR TEMPERATURE

SNOW/MOISTURE DETECTION

SLAB TEMPERATURE

GAS FIRED UNIT HEATERS (EXISTING)

CONTROL BY DDC SYSTEM.

SYSTEM INDICATION

GRAPHIC INTERFACE

SPACE TEMPERATURE

OPERATION MODE

SHALL OPERATE.

- ON TEMPERATURES BETWEEN WARM WEATHER CUT-OFE AND COLD WEATHER CUT-OFF AND NO DETEXTION OF SNOW/MOISTURE THE SLAB SHALL BE IN IDLE MODE AT 31°F, ADJUSTABLE. ZONE PUMP SHALL RUN TO MAINTAIN SLAB
- CUT-OFF AND DETECTION OF SNOWMOISTURE THE SLAB SHALL BE IN MELT MODE. SYSTEM SHALL RUN A MINIMUM RUN TIME AFTER THERE HAS BEEN NO SNOW/MOISTURE DETECTED AT SLAB SENSOR. ZONE PUMP SHALL RUN UNTIL NO SNOW/MOISTURE IS DETECTED AND MINIMUM RUN TIME HAS EXPIRED. SUPPLY FLUID TEMPERATURE TO SNOWMELT ZONE SET MANUALLY AT ZONE'S

IDLE MODE TEMPERATURE SETPOINT (31°F, ADJUSTABLE)

COLD WEATHER SHUT-OFE TEMPERATURE (0°E, ADJUSTABLE)

WARM WEATHER SHUT-OFF TEMPERATURE (34°F, ADJUSTABLE)

MINIMUM RUN TIME AFTER NO SNOW/MOISTURE DETECTION (4 HOURS, ADJUSTABLE)

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), UNIT

- TEMPERATURE. ON TEMPERATURES RETWEEN WARM WEATHER CUT-OFE AND COLD WEATHER











LOW SPACE TEMPERATURE ALARM • LOW SPACE TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)

HIGH SPACE TEMPERATURE INDICATION

SPACE TEMPERATURE SETPOINT (65°F, ADJUSTABLE)

- HIGH SPACE TEMPERATURE INDICATION SETPOINT (80°F, ADJUSTABLE)
- HYDRONIC UNIT HEATERS (EXISTING)

CONTROL BY DDC SYSTEM.

- OPERATION MODE
- ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), FAN SHALL CYCLE. THE COIL SHALL RUN WILD.

SYSTEM INDICATION

- GRAPHIC INTERFACE
- SPACE TEMPERATURE
- SPACE TEMPERATURE SETPOINT (70°F, ADJUSTABLE)
- LOW SPACE TEMPERATURE ALARM
- LOW SPACE TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)
- HIGH SPACE TEMPERATURE INDICATION
- HIGH SPACE TEMPERATURE INDICATION SETPOINT (90°F, ADJUSTABLE)

* SEQUENCE CONTINUED ON M0.03 **

1"

CABINET UNIT HEATERS (EXISTING)

CONTROL BY DDC SYSTEM. OPERATION MODE

ON CALL FOR HEAT FROM WALL MOUNTED THERMOSTAT (ADJUSTABLE), FAN

SHALL CYCLE. THE COIL SHALL RUN WILD.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- SPACE TEMPERATURE
- SPACE TEMPERATURE SETPOINT (65°F, ADJUSTABLE)
- LOW SPACE TEMPERATURE ALARM
- LOW SPACE TEMPERATURE ALARM SETPOINT (36°F, ADJUSTABLE) HIGH SPACE TEMPERATURE INDICATION
- HIGH SPACE TEMPERATURE INDICATION SETPOINT (90°E ADJUSTABLE)
- HYDRONIC GLYCOL HEATING PUMP (CP-1A AND CP-1B)

CONTROL BY DDC SYSTEM.

PUMPS SHALL OPERATE CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS AT THE ON-OFF SETPOINT OR LESS. IF PUMP FAILS TO START AS COMMANDED, SIGNAL ALARM. PUMP VFD SHALL MODULATE TO MAINTAIN HYDRONIC SYSTEM DIFFERENTIAL PRESSURE SETPOINT. DETERMINE THE APPROPRIATE DIFFERENTIAL PRESSURE SETPOINT DURING BALANCING OF SYSTEM

PUMPS SHALL OPERATE IN A LEAD - STANDBY CONFIGURATION WHEN OUTSIDE AIR TEMPERATURE IS AT THE ON-OFF SETPOINT OR LESS. LEAD PUMP SHALL RUN CONTINUOUSLY, JE PLIMP FAILS TO START AS COMMANDED SIGNAL ALARMAND. STANDBY PUMP SHALL OPERATE. LEAD - STANDBY PUMP DESIGNATION SHALL ROTATE AFTER PUMP ROTATION SETPOINT HAS BEEN MET.

SYSTEM INDICATION

- GRAPHIC INTERFACE
- SYSTEM STATUS
- OUTSIDE AIR TEMPERATURE
- OUTSIDE AIR TEMPERATURE ON-OFF SETPOINT (65°F, ADJUSTABLE)
- HEATING FLUID LOOP SUPPLY TEMPERATURE
- HEATING FLUID LOOP RETURN TEMPERATURE
- LEAD PUMP INDICATION
- LEAD PUMP STATUS
- STANDBY PUMP STATUS
- PUMP FAILURE ALARM
- PUMP HOURS TOTAL, EACH PUMP
- PUMP HOURS CURRENT ROTATION
- PUMP ROTATION SETPOINT (168 HOURS AD ILISTABLE)
- DIFFERENTIAL PRESSURE SETPOINT
- DIFFERENTIAL PRESSURE
- VFD OUTPUT, EACH PUMP

HYDRONIC HEATING PUMP (CP-2)

PUMP SHALL OPERATE CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS AT THE ON-OFF SETPOINT OR LESS. IF PUMP FAILS TO START AS COMMANDED. SIGNAL ALARM.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- SYSTEM STATUS
- OUTSIDE AIR TEMPERATURE
- OUTSIDE AIR TEMPERATURE ON-OFF SETPOINT (65°F, ADJUSTABLE)
- HEATING FLUID LOOP SUPPLY TEMPERATURE
- HEATING FLUID LOOP RETURN TEMPERATURE
- PUMP FAILURE ALARM PUMP HOURS

HYDRONIC GLYCOL HEATING PUMP (CP-3)

PUMP SHALL OPERATE CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS AT THE ON-OF SETPOINT OR LESS. IF PUMP FAILS TO START AS COMMANDED SIGNAL ALARM.

SYSTEM INDICATION

- GRAPHIC INTERFACE
- SYSTEM STATUS
- OUTSIDE AIR TEMPERATURE
- OUTSIDE AIR TEMPERATURE ON-OFE SETPOINT (65°E AD IUSTABLE)
- HEATING FLUID LOOP SUPPLY TEMPERATURE
- HEATING ELUID LOOP RETURN TEMPERATURE
- PUMP FAILURE ALARM
- PUMP HOURS

DOMESTIC WATER TANK CIRCULATION PUMP (CP-4, EXISTING) PUMP SHALL OPERATE CONTINUOUSLY. IF PUMP FAILS TO RUN. SIGNAL ALARM.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- PUMP STATUS
- PUMP FAILURE ALARM
- PUMP HOURS

DOMESTIC WATER RECIRCULATION PUMP (CP-5, EXISTING) PUMP SHALL OPERATE CONTINUOUSLY. JE PUMP FAILS TO RUN SIGNAL ALARM.

- SYSTEM INDICATION
- GRAPHIC INTERFACE
- PUMP STATUS
- PUMP FAILURE ALARM
- PUMP HOURS

HYDRONIC GLYCOL COOLING PUMP (CP-11)

PUMP SHALL OPERATE CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS AT THE ON-OFE SETPOINT OR MORE. IF PUMP FAILS TO START AS COMMANDED SIGNAL ALARM

SYSTEM INDICATION

- GRAPHIC INTERFACE
- SYSTEM STATUS
- OUTSIDE AIR TEMPERATURE
- OUTSIDE AIR TEMPERATURE ON-OFF SETPOINT (56°F, ADJUSTABLE)
- COOLING ELLIID LOOP SUPPLY TEMPERATURE
- COOLING FLUID LOOP RETURN TEMPERATURE
- PUMP FAILURF ALARM
- PUMP HOURS

AIR HANDLING UNIT (AHU-1, EXISTING) DDC SYSTEM SHALL OPERATE UNIT START-UP MODE

IF THE BUILDING HAS CALL FOR HEATING, AT THE BEGINNING OF START-UP MODE THE RETURN AIR DAMPERS SHALL OPEN 100% AND OUTSIDE AIR DAMPERS SHALL BE CLOSED. THE FAN SHALL RUN. WHEN RETURN AIR TEMPERATURE RISES TO 70°F (ADJUSTABLE) THE SYSTEM SHALL SWITCH TO OCCUPIED MODE OPERATION. IF THE BUILDING HAS CALL FOR COOLING AND THE OUTSIDE AIR TEMPERATURES DOES NOT ALLOW FOR ECONOMIZER COOLING AT THE BEGINNING OF START UP MODE THE RETURN AIR DAMPERS SHALL OPEN 100% AND OUTSIDE AIR DAMPERS SHALL BE CLOSED. COOLING SYSTEM SHALL OPERATE TO MAINTAIN COOLING SUPPLY AIR TEMPERATURE SETPOINT OF 55°E (ADJUSTABLE). WHEN RETURN AIR TEMPERATURE FALLS TO 75°F (ADJUSTABLE) THE SYSTEM SHALL SWITCH TO OCCUPIED MODE OPERATION.

IF THE BUILDING HAS CALL FOR COOLING AND THE OUTSIDE AIR TEMPERATURES DOES ALLOW FOR ECONOMIZER COOLING AT THE BEGINNING OF START UP MODE

SEQUENCE OF OPERATIONS - CONTINUED

RESTROOM EXHAUST FAN (EF-3, EF-4 AND(EF-5(E))

SYSTEM SHALL OPERATE IN OCCUPIED MODE.

SYSTEM SHALL OPERATE IN OCCUPIED MODE

MAKE UP AIR UNIT AND EXHAUST FAN (EF-1)

MAKE UP AIR UNIT AND EXHAUST FAN. EF-1. SHALL BE INTERLOCKED.

PROVIDE MANUAL ON-OFF SWITCH IN APPARATUS BAY

MAKE-UP AIR UNIT'S SHALL FIRE BURNER TO MAINTAIN 50°F (ADJUSTABLE) SUPPLY

ON DETECTION OF RELATIVE HUMIDITY ABOVE 50% (ADJUSTABLE) IN APPARATUS

ON DETECTION OF CO OR NO2 IN APPARATUS BAY. THE SYSTEM SHALL OPERATE

UNTIL CO AND/OR NO2 LEVELS FALL BELOW ACTIVATION THRESHOLD. PROVIDE CO/NO2 DETECTOR FOR APPARATUS BAY. REFER TO GAS DETECTOR

MANUFACTURER'S RECOMMENDATION FOR ACTIVATION THRESHOLD SETPOINTS

• RELATIVE HUMIDITY ACTIVATION SETPOINT (50% R.H., ADJUSTABLE)

BREATHING AIR COMPRESSOR ROOM EXHAUST FAN SYSTEM (EF-2, EXISTING)

FAN SHALL OPERATE ON TEMPERATURE RISE BASED ON ADJUSTABLE ROOM

SPACE TEMPERATURE SETPOINT (70°F, ADJUSTABLE)

• LOW TEMPERATURE ALARM SETPOINT (40°F, ADJUSTABLE)

HIGH TEMPERATURE ALARM SETPOINT (90°F, ADJUSTABLE)

THERMOSTAT SETPOINT. THE INTAKE AIR AND EXHAUST AIR DAMPERS SHALL OPEN

BAY, THE SYSTEM SHALL OPERATE UNTIL RELATIVE HUMIDITY FALLS BELOW

OPERATION MODES SHALL BE CONTROLLED BY THE DDC CONTROLLER'S INTERNAL

CONTROL BY DDC SYSTEM.

LINIT SHALL RUN CONTINUOUSLY

OPERATION MODE

OCCUPIED MODE

UNOCCUPIED MODE

UNIT SHALL BE OFF

START-UP MODE

OVERRIDE MODE

SYSTEM INDICATION

SYSTEM STATUS

FAN STATUS

CONTROL BY DDC SYSTEM

ACTIVATION THRESHOLD.

SYSTEM INDICATION

SYSTEM STATUS

CO LEVEL

NO2 LEVEL

CONTROL BY DDC SYSTEM.

WHEN FAN IS OPERATING.

FAN STATUS

SYSTEM INDICATION

GRAPHIC INTERFACE

SPACE TEMPERATURE

LOW TEMPERATURE ALARM

HIGH TEMPERATURE INDICATION

GRAPHIC INTERFACE

RELATIVE HUMIDITY

CO/NO2 DETECTION

OPERATION MODE

GRAPHIC INTERFACE

CLOCK

THE SYSTEM SHALL MODULATE ECONOMIZER OUTSIDE AIR DAMPERS AND RETURN AIR DAMPERS AS REQUIRED TO MEET SUPPLY AIR TEMPERATURE SETPOINT WITH OUTSIDE AIR. ECONOMIZER MODE SHALL BE ENABLED WHENEVER OUTSIDE AIR TEMPERATURE IS LESS THAN RETURN AIR WITH TEMPERATURE ON A CALL FOR COOLING. THE DAMPERS SHALL BE SEQUENCED WITH THE COOLING SYSTEM. WHEN RETURN AIR TEMPERATURE FALLS TO 75°F (ADJUSTABLE) THE SYSTEM SHALL SWITCH TO OCCUPIED MODE OPERATION. OCCUPIED MODE

THE UNIT SHALL RUN CONTINUOUSLY.

OUTSIDE AIR DAMPERS SHALL PROVIDE THE MINIMUM OUTSIDE AIR REQUIRED. OUTSIDE AIR AIRFLOW QUANTITY SHALL BE A SET MINIMUM DAMPER POSITION DETERMINED DURING SYSTEM BALANCING.

THE OUTSIDE AIR DAMPERS, RETURN DAMPERS AND THE COOLING COIL SHALL MODULATE TO MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT BASED ON THE WORST CASE COOLING ZONE.

WHEN THE OUTSIDE AIR TEMPERATURES ALLOW FOR ECONOMIZER COOLING THE SYSTEM SHALL MODULATE ECONOMIZER OUTSIDE AIR DAMPERS AND RETURN AIR DAMPERS AS REQUIRED TO MEET SUPPLY AIR TEMPERATURE SETPOINT WITH CUTSIDE AIR. ECONOMIZER MODE SHALL BE ENABLED WHENEVER OUTSIDE AIR TEMPERATURE IS LESS THAN RETURN AIR TEMPERATURE ON A CALL FOR COOLING. THE DAMPERS SHALL BE SEQUENCED WITH THE COOLING SYSTEM.

UNOCCUPIED MODE THE UNIT SHALL BE OFF. OUTSIDE AIR DAMPERS SHALL BE SHUT RETURN

DAMPERS SHALL BE OPEN. ON LOW TEMPERATURE ALARM FROM HEAT FROM ANY ZONE THE UNIT SHALL OPERATE IN START UP HEATING MODE. OVERRIDE MODE

UNIT SHALL OPERATE IN OCCUPIED MODE.

BUILDING PRESSURE ON BUILDING HIGH STATIC ALARM, 0.07" W.C., (ADJUSTABLE) THE UNIT SHALL STOP

AND THE OUTSIDE AIR DAMPERS SHALL CLOSE. SIGNAL ALARM.

FREEZE PROTECTION IF SUPPLY AIR TEMPERATURE IS BELOW FREEZE ALARM SETPOINT THE UNIT SHALL STOP, THE OUTSIDE AIR DAMPERS SHALL CLOSE. SIGNAL ALARM.

SMOKE DETECTION

PROVIDE SMOKE DETECTOR IN RETURN AIR DUCT WORK. IF SMOKE IS DETECTED, THE FAN SHALL STOP AND THE OUTSIDE AIR DAMPERS SHALL CLOSE. SIGNAL ALARM TO FIRE ALARM SYSTEM.

CHILLER (CH-1)

INTEGRAL CONTROLS SHALL OPERATE CHILLER. DDC SYSTEM SHALL ENABLE/DISABLE CHILLER. THE CHILLER SHALL BE ENABLED WHEN OUTSIDE AIR EXCEED ENABLED TEMPERATURE SETPOINT

OPERATION MODES SHALL FOLLOW AIR HANDLING UNIT OPERATION MODES.

ROOM THERMOSTAT SHALL MODULATE VARIABLE VOLUME DAMPER OPERATOR.

- SYSTEM INDICATION
- GRAPHIC INTERFACE OUTSIDE AIR TEMPERATURE ENABLE/DISABLE STATUS

• ENABLE SETPOINT (58°F, ADJUSTABLE)

COOLING FLUID SUPPLY TEMPERATURE

COOLING FLUID RETURN TEMPERATURI

HIGH SUPPLY TEMPERATURE ALARM

CHILLER GENERAL ALARMS

MOTORIZED DUCT DAMPERS (EXISTING)

LOCATED IN DUCT TO PROVIDE COOLING

TEMPERATURE SETPOINT IN ZONE

CONTROL BY DDC SYSTEM.

SYSTEM INDICATION

GRAPHIC INTERFACE

TEMPERATURE OF ZONE

OPERATION MODE

OCCUPIED MODE

- GENERATOR ROOM VENTILATION (EXISTING)
- CONTROL BY DDC SYSTEM.
- WHEN THE GENERATOR IS NOT RUNNING, THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL BE CLOSED AND THE RECIRCULATION DAMPER SHALL BE OPEN. WHEN THE GENERATOR STARTS, THE OUTSIDE AIR DAMPER SHALL OPEN 10%. IF
- THE OUTSIDE AIR DAMPER DOES NOT OPEN, INITIATE ALARN WHEN THE GENERATOR IS RUNNING, THE OUTSIDE AIR DAMPER SHALL BE OPEN A
- MINIMUM OF 10%. THE OUTSIDE AIR, EXHAUST AIR AND RECIRCULATION A DAMPERS SHALL MODULATE TO MAINTAIN THE ROOM TEMPERATURE.
- ON HIGH OR LOW SPACE TEMPERATURE INITIATE ALARM.
- PROVIDE GENERAL TROUBLE ALARM INTERFACED WITH ENGINE GENERATOR
- SYSTEM INDICATION
- GRAPHIC INTERFACE
- GENERATOR ON/OFF STATUS
- SPACE TEMPERATURE
- SPACE TEMPERATURE SETPOINT DURING GENERATOR OPERATION (80°F, ADJUSTABLE)
- LOW SPACE TEMPERATURE ALARM
- LOW SPACE TEMPERATURE ALARM SETPOINT (35°F, ADJUSTABLE)
- HIGH SPACE TEMPERATURE ALARM
- HIGH SPACE TEMPERATURE ALARM SETPOINT (100°F, ADJUSTABLE) OUTSIDE/COMBUSTION AIR CONTROL DAMPER POSITION (FULL OPEN / SHUT)
- EXHAUST AIR CONTROL DAMPER POSITION
- RECIRCULATION AIR CONTROL DAMPER POSITION
- ENGINE GENERATOR TROUBLE ALARM
- COMBUSTION AIR CONTROL DAMPER NOT OPEN ALARM

THERMOSTATS

REPLACE ALL EXISTING THERMOSTATS/SENSOR ON EQUIPMENT TO BE CONTROLLED BY DDC SYSTEM. THERMOSTATS/SENSORS FOR DUCT COOLING ZONES, BASEBOARD ZONES, CABINET UNIT HEATER ZONES AND PUBLIC SPACES SHALL BE LOW VOLTAGE WITH SETTING AND UNOCCUPIED SETBACK CONTROL. HEATING ONLY OR HEATING AND COOLING AS REQUIRED. LOCKING COVER WITH SETPOINT ADJUSTMENT. SETPOINT INDICATION WITH THERMOMETER. DDC SYSTEM SHALL BE ABLE TO MONITOR AND CONTROL/LIMIT ALL SPACE TEMPERATURES PROVIDE INSULATING BASE FOR THERMOSTATS MOUNTED ON EXTERIOR WALLS PROVIDE SENSORS THAT ARE ADJUSTABLE ONLY THROUGH THE DDC SYSTEM AT PUBLIC SPACES AND AS INDICTED ON DRAWINGS.

SYSTEM INDICATION

- GRAPHIC INTERFACE
- SPACE TEMPERATURE SETPOINT
- NIGHT SETBACK TEMPERATURE SETPOINT
- SPACE TEMPERATURE
- LOW SPACE TEMPERATURE ALARM HIGH SPACE TEMPERATURE INDICATION
- EXHAUST FAN (EF-7) CONTROL BY DDC SYSTEM OPERATION MODE FAN SHALL RUN CONTINUOUSLY. SYSTEM INDICATION GRAPHIC INTERFACE FAN STATUS FAN FAILURE ALARM

** END OF SEQUENCES *

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Project Alaska Regional Fire Training Center Building Rehab Pre-Bid Meeting: Aug 14th, 2019 at 1:00 pm Council Chambers Site Visit / Tour of Site Last Day for Ques: August 21th, 2019 4pm Bid Due Date and Time: August 29th, 2019 by 2 pm

	COMPANY	CONTACT PERSON	MAILING ADDRESS	CITY, STATE, ZIP CODE	PHONE	EMAIL	FAX
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E	Constructconnect	Maria Delfino	30 Technology Parkway S, Ste. 500	Norcross, GA 30092	(303) 602-5079	maria.delfino@cmdgroup.com	
E	Daily Journal of Commerce	Laura Heberlein	P.O. Box 11050	Seattle, WA 98111	(206) 622-8272	laura.heberlein@djc.com	
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1	City of Kenai	Admin Assistant	210 Fidalgo Ave	Kenai, Alaska 99611	(907) 283-8236	publicworks@kenai.city	
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	Rain Proof Roofing	John Birchfield	2201 East 84th Court	Anchorage, AK 99507	907 344-5545	jbirchfield@rainproofroofing.com	
	KFT Fire Trainer, LLC	Steven J. Williamson	17 Phillips Parkway	Montvale, NJ 07645	201 300 8107	Steve.Williamson@kft.firetrainer.com	
	Kirila Fire Training Facilities	Wes Barbour	3007 State Route 7	Fowler, OH 44418	330-969-9920	wes@kirilafire.com	
	FANDM Commerical Construction	Floyd Lindbloom	13880 Fire Creek Trail	Eagle River, AK 99577	907 602 2313	store2206@theUSPSstore.com	
	Tim Orthmeyer	Morrison-Maierle	1 Engineering Place	Helena, MT 59602	406-495-3425	torthmeyer@m-m.net	
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	Udelhoven	Jake Arness	184 E. 53rd Ave	Anchorage, AK 99518	907 394 2610	jarness@udelhoven.com	
	Simulation/Amt	Thomas Wagner		Pittsburg, PA	412-215-0343	thomas.wagner@simulationfire.com	
	City of Kenai	Mary Bondurant	305 N Willow Street	Kenai, Alaska 99611	907 283-8282	mbondurant@kenai.city	
	Anchorage Roffing & Contracting Inc.	Rick Purcella	10961Lake Otis Parkway	Anchorage, AK 99516	907 344-4554	ari-rick@alaskan.com	
	Meridian Systems, Inc.	Brett Allemann	200 W. 34th Ave	Anchorage, AK	907 360-6239	ballemann@msicontrols.com	
	Peninsula Plumbing	Dylan Shay	35581 Kenai Spur Hwy	Soldotna, AK 99669	907 262-5879	penph@acsalaska.net	
	Blazy Construction	Randall Nelson	36130 Kenai Spur Hwy	Soldotna, AK 99669	907 262-3810	randall@blazycon.com	
	Constructconnect	John N. Fermiza	30 Technology Parkway S, Ste. 500	Norcross, GA 30092	323 602 5079	John.Fermiza@ConstructConnect.com	
	Water Works Plumbing & Heating		36269 Lakeshore Drive	Soldotna, AK 99669	907 398-8580	hillyer@alaska.net	
	Legacy Electric	Derek Leichliter	46113 Sather Court	Soldotna, AK 99669	907 252-4391	legacyelectricak@gmail.com	
	Home Gallery	Lee and Dee Cassel	11312 Kenai Spur Hwy #24	Kenai, Alaska 99611	907 335-4663	dee@homegallery2.com	